Depth, feet.	*Thickness, feet.*	
610	10	Light gray limestone.
615	5	Dark soapstone.
630	15	Dark shale.
637	7	Gray limestone.
642	5	Black flint (chert).

"CONE-IN-CONE" (AN IMPURE CALCITE).

By H. J. HARNLY, McPherson, Kan. Read before the Academy January 3, 1896.

I have been unable to determine who first named this peculiar variety of impure calcite "cone-in-cone." The name has apparently grown out of its peculiar structure, for "cone-in-cone" in fact it seems to be.

My attention was first called to the mineral about three years ago. Some took it to be fossil wood, which in some respects it resembles; others boring through it in well-making took it for a bed of bones, while still others supposed it to be a distinctive mineral, possibly new. During the summer of 1893 I found it in place in various localities in the northwestern part of McPherson county and the southeastern part of Ellsworth county. It is reported to be found in Lincoln and Russell counties. During the past summer I found it in two localities in Washington county.

In McPherson and Ellsworth counties, where I have seen it in place in many localities, it is found always to occupy the same relative position, underlying the Dakota sandstone and clay, and overlying a bed of shells which varies from a fraction of an inch to two or three inches in thickness. Underlying the bed of shells there is a stratum of clay of considerable thickness, and rich in gypsum crystals. I have found in it almost perfect individual crystals seven inches long. Beneath the clay there is red shale.

The cone-in-cone varies from less than an inch to six or seven inches in thickness. In Washington county it immediately underlies the Fort Benton limestone.

Being desirous to know more definitely what the substance is, I had several analyses made of it. They all agree in making it a calcite with some SiO_2, Fe_2O_3, Al_2O_3, as impurities; the purer specimens giving the regular calcite analysis with but slight impurities. The following are the results of the analyses:

SiO_2 from 1.4 to 5.84 per cent.
Fe_2O_3 and Al_2O_3 from 1.2 to 2.62 per cent.
CaO from 54.13 to 54.64 per cent.
CO_2 from 33.07 to 42.06 per cent.
MgO from .0 to 2.76 per cent.
and traces of several other compounds.

No fossils were found in the cone-in-cone itself. It seems evident that it was deposited from a water solution, probably at the time when the seas were drying up, so that the water became saturated and the animal life destroyed. The peculiar almost constant cone structure is harder to explain, but most probably is due to the impurities.